

NISSAN ENGINE

MODEL P

SERVICE MANUAL



NISSAN MOTOR CO., LTD.

TOKYO, JAPAN

NISSAN ENGINE

MODEL P

SERVICE MANUAL



NISSAN MOTOR CO., LTD.

TOKYO, JAPAN

FOREWORD

This manual has been compiled for purpose of assisting NISSAN distributors and dealers for effective service and maintenance of the Model "P" engine.

Model "P" engine has been used for the various models of vehicles such as Model 680, Model 4W73 and Model 60 series.

Each assembly of major components is described in detail. In addition, comprehensive instructions are given for assembling and inspection of these assemblies.

The difference between Model 680, 4W73 and 60 are also given in this manual as far as engine concerned.

It is emphasised that the only genuine Nissan Spare Parts should be used as replacements.

CONTENTS

	Page.
GENERAL INFORMATIONS	
SPECIFICATIONS	1
PERFORMANCE CURVES OF NISSAN MODEL P ENGINE	4
GENERAL INSPECTION OF ENGINE	7
SHORT CUT FOR TROUBLE SHOOTING	10
SECTION 1. CYLINDER & CYLINDER HEAD	15
1 - 1 Cylinder	15
1 - 2 Cylinder head	20
SECTION 2. PISTON, PISTON RING, PISTON PIN & CONNECTING ROD	23
2 - 1 Piston	23
2 - 2	25
2 - 3 Piston ring and piston pin	28
2 - 4	30
2 - 5 Connecting rod	32
SECTION 3. CRANKSHAFT	37
3 - 1 Disassembling of crankshaft	39
3 - 2 Rear bearing seal	43
SECTION 4. CAMSHAFT, VALVE, TAPPET & TIMING	47
4 - 1 Removal of cylinder head	51
4 - 2 Removal of valves	52
4 - 3 Replacement	52
4 - 4 Valve grinding	52
4 - 5 Refitting the cylinder head	53
4 - 6 Timing gear & camshaft	54
SECTION 5. MANIFOLD	57
5 - 1 Removal	57
5 - 2 Inspection	57
5 - 3 Heat control assembly	57
SECTION 6. LUBRICATION SYSTEM	59
6 - 1 Adjustment of oil regulator	60
6 - 2 Oil filter	63
SECTION 7. COOLING SYSTEM	67
7 - 1 Water pump, fan & fan belt	67
7 - 2 Repair of water pump	68
7 - 3 Radiator, thermostat & heat indicator	72

	Page
SECTION 8. FUEL SYSTEM	77
8 - 1 Fuel pump	77
8 - 2 Repair of fuel pump	78
8 - 3 Carburetor	80
8 - 4 Adjustment of carburetor	84
8 - 5 Air cleaner	87
8 - 6 Gasoline strainer	87
8 - 7 Gasoline tank & gasoline gauge	89
SECTION 9. IGNITION SYSTEM	93
9 - 1 Check & repair	95
9 - 2 Adjustment	100
SECTION 10. GENERATING SYSTEM	103
10 - 1 Generator	103
10 - 2 Cautions for handling generator	104
10 - 3 Carbon pile type voltage regulator	105
10 - 4 Troubles and remedy of generator and regulator	106
10 - 5 Test of generator	110
10 - 6 Wiring of generator, voltage regulator and out put adjustment...	111
SECTION 11. STARTER MOTOR	115
11 - 1 Repair	115
SECTION 12. BATTERY	119
12 - 1 Handling of battery	119

GENERAL INFORMATIONS

SPECIFICATIONS

ENGINE PROPER:

Model	P Engine (for 680, 60 & 4W73 Series)
Maker	Nissan Motor Co., Ltd.
Kind of Engine	Gasoline Engine
Cooling	Water
Cylinder Arrangement	Straight 6
Cycles	4
Combustion Chamber	Bath tube type
Cylinder Head	Over head valve
Bore x Stroke (mm)	85.7 x 114.3
Total Displacement Volume (cc.)	3,956
Compression Ratio	7.6 : 1
Compression Pressure (lb/□"-200 rpm)	157
Maximum Horse Power (HP/rpm) (S. A. E.)	145/3800
Maximum Torque (m-kg/rpm) 235 ft-lbs 2000 rpm	32.5/2000
Minimum Fuel Consumption at Full Load (g/P.S.-h/rpm)	220/1600
Engine Dimensions (mm) - Length - Fan to Fly wheel	904
Width - Rear Support, right to Air Cleaner, left	655
Height - Air Cleaner to Oil Pan	882
Engine Weight (Equipped) (dry) (kg)	293
Number of Piston Rings - Compression	2
- Oil	1
Type of Piston	Steel strut
Material of Piston	LO-EX
Valve Timing:	
Inlet Valve, open (degrees) B. T. D. C.	14°
Inlet Valve, closed (degrees) A. B. D. C.	50°
Exhaust Valve, open (degrees) B. B. D. C.	52°
Exhaust Valve, closed (degrees) A. T. D. C.	12°
Valve Tappet Clearance:	
Inlet Valve (hot) (mm)	0.38 ~ 0.4
Exhaust Valve (hot) (mm)	0.38 ~ 0.4
Ignition Method	Battery & Ignition coil
Ignition Timing (B. T. D. C. /rpm)	10°/450
Firing Order	1-5-3-6-2-4
Starting Method	Startor Motor & Crank Handle

IGNITION SYSTEM:

Ignition Coil - Model	HITACHI CIZ-01
Distributor - Model	HITACHI D608-01, D608-51A (60 series)
Type of Spark Advancer	Centrifugal & Vacuum Control

Sparking plug - Model B54E or B6E
 Maker N. G. K. or HITACHI
 Diameter (mm) 14
 Sparking Clearance (mm) 0.75
 Number of pole 1
 Insulating Material Porcelain

FUEL SYSTEM:

Carburetor - Original Model Stromberg
 Type . . VC42-1A (680 Series), VC42-4A-5A (60, E690,
 FG60, 4W73)
 Maker HITACHI
 Dia. of Throttle Valve (mm) 42
 Dia. of Ventury Tube (mm) 36-17-10
 Dia. of High Speed Jet (mm) 1.43 (VC42-1A),
 1.35 (VC42-4A-5A)
 Dia. of Low Speed Jet (mm) 0.55
 Dia. of Econormizer Jet (mm) 1.10
 Draft Direction Downward
 Air-Cleaner - Type Oil Bath
 Maker Tsuchiya
 Number 1
 Fuel Feed Pump - Type Diaphragm
 Maker Showa Seiki/Kyosan Denki

LUBRICATING SYSTEM:

Method Pressure Feed
 Type of Oil Pump Gear Pump
 Type of Oil Filter Paper Filter
 Oil Pan Capacity (ltr.) 5.3 (680 series)
 6.7 (60 series)

COOLING SYSTEM:

Method Forced Circulation with Centrifugal Pump
 Radiator Fin and Tube Type
 Type of Water Pump Centrifugal Pump
 Thermostat Pellet

BATTERY:

Model 2SMC
 Voltage 12 volt
 Capacity (amp - hr.) 60 (20 hr. rating), E690 (120A/30h)
 Number 1
 Terminal grounded +(positive) side

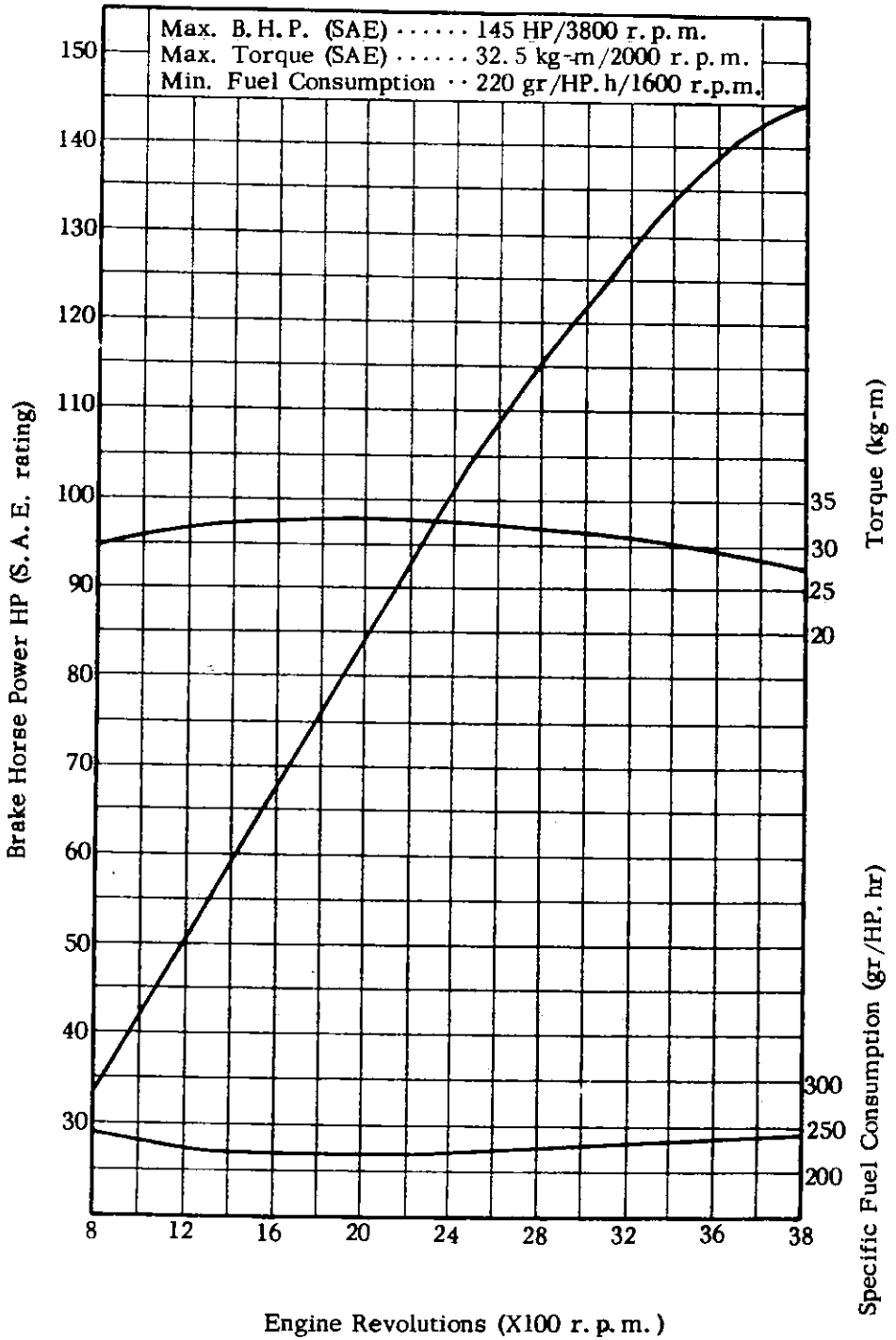
GENERATOR:

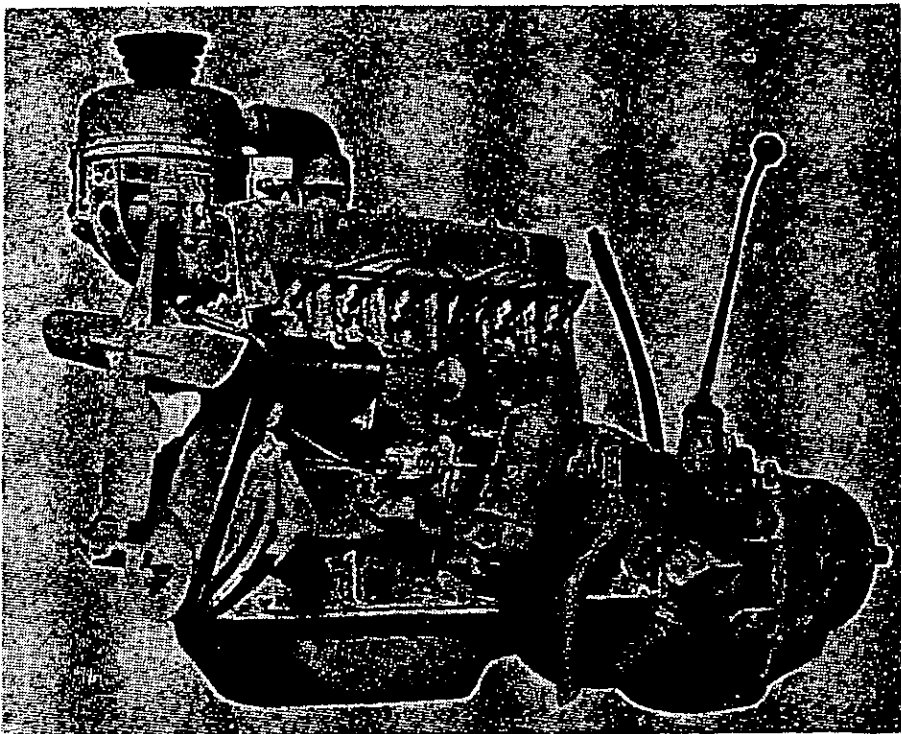
Model HITACHI
Maker Shunt-wound
Type of Winding - 12 volt
Voltage 200W
Capacity (kw) Carbon-pile
Type of Voltage Regulator R115-50, G140-07 (F680, E690)

STARTING MOTOR:

Model MFB - HRZ
Maker HITACHI
Volt - Power (v-hp) 12 - 1.0
S114-23, S114-21 (E690)

PERFORMANCE CURVES OF NISSAN MODEL P ENGINE





ENGINE-LEFT SIDE